White Square Inc.

Safety Touch

ANTI-MICROBIAL COPPER FILM

Contact us for Ordering & Installation

B+B PRINT SOURCE

• BE IMPRESSED •

CONTENTS

- OUR EVERYDAY CONTACTS
- THE VIRUS
- THE RELATIONS BETWEEN BACTERIA & VIRUSES
- COPPER & ITS EFFECTIVENESS
- ANTIMICROBIAL ACTIVITY OF COPPER
- STRUCTURE OF SAFETY TOUCH
- APPLICATIONS
- TEST REPORTS AND CERTIFICATION

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WHAT DO YOU COME IN CONTACT WITH, IN YOUR EVERYDAY WORLD?

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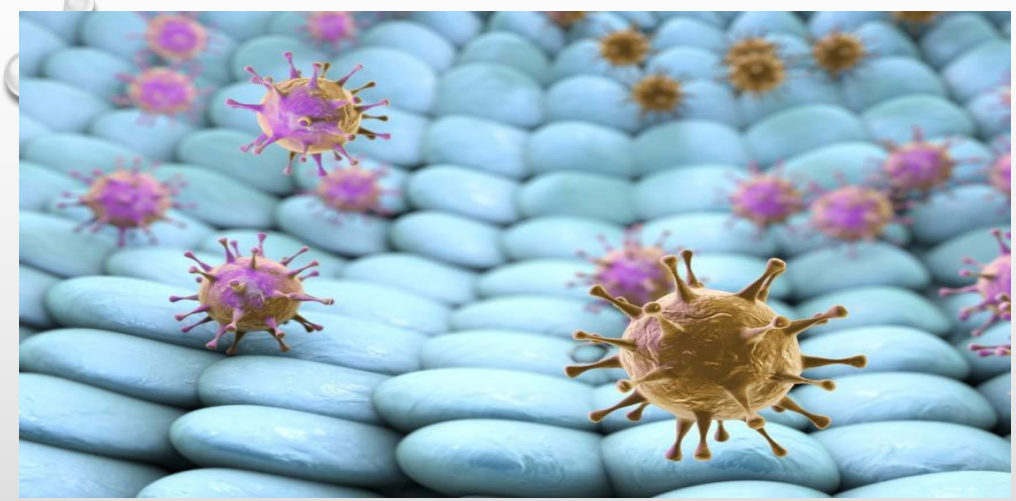
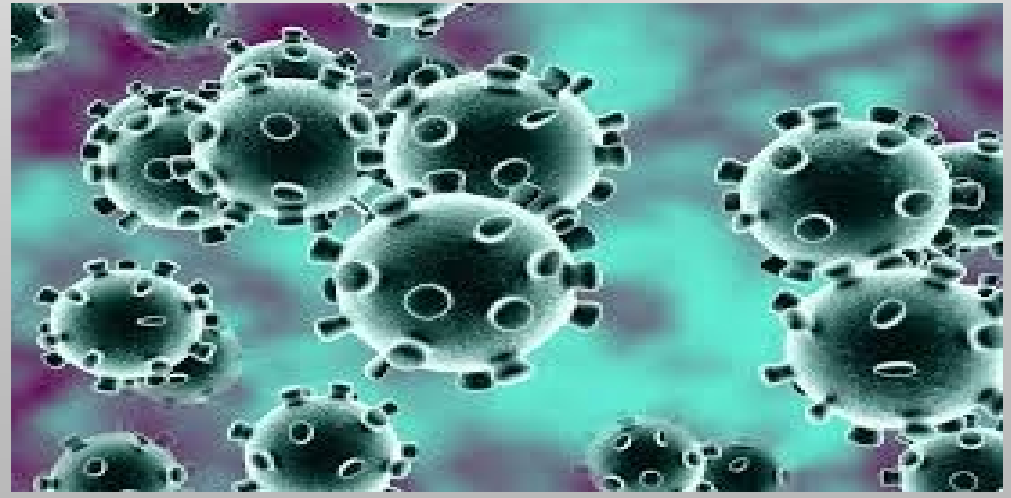
What is a VIRUS?





Like SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome), are pathogenic organisms that are known to be more influential to animals than humans. Though occasionally, they can mutate over time and through many species, to become a threat to humans. However, since the development of a vaccine or cure, require great dedication and participation from the government, as well as time and funds to get through all clinical tests and federal approvals, the only option for preventing the spread of the virus is by decomposing it before contact on humans.

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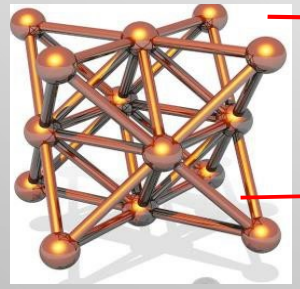
THE RELATIONSHIP BETWEEN BACTERIA & VIRUSES

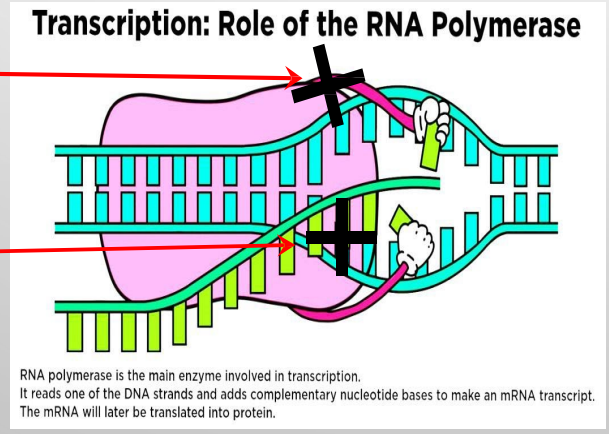
Bacteria and germs, as you know exist everywhere. A better question would be to ask, where do they not exist.

Viruses on the other hand do not have enough enzymes within themselves to reproduce and become infectious. They require host cells in which bacteria and germs consist of. And when they are successful of attaching themselves to these host cells, reproductions and mutations take place to where they can mature into an infectious virus.
Though viruses can survive without a host, it is able to do so only for a short period of time more recognized as simply identifiable rather than an infectious.

Our Antimicrobial Copper Film is designed to prevent a virus from reproduction and maturation into a harmful infectious. It exterminates bacterial organisms before they are discovered by viral cells. And remember, identifiable viruses survive as tremendously weak, only for a short time period until disintegration.

The Principle in Antiviral effect of Copper





Bacteria infected hands create a great environment for virus replication.

Antimicrobial copper acts as an inhibitor of virus RNA replication and prevents the viruses of self-replication.

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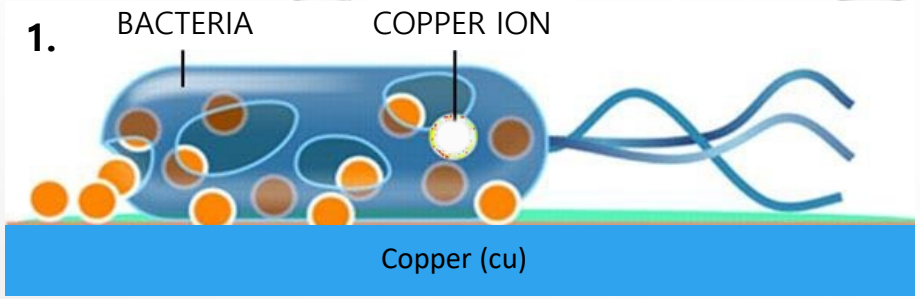
COPPER & ITS EFFECTIVENSS

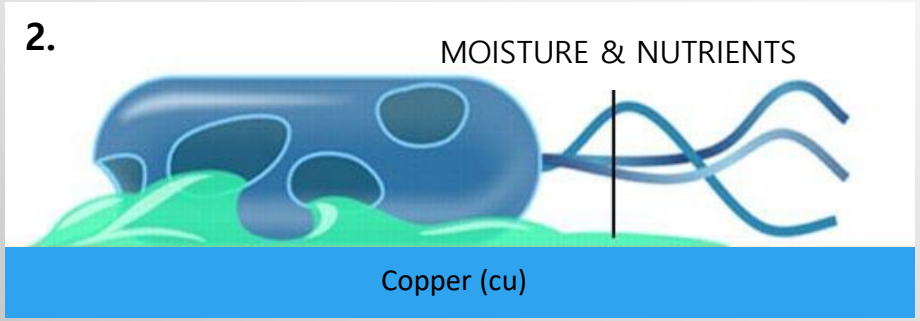
1.



Bacteria recognizes copper-ion on the surface as essential nutrients. The bacteria absorbs it into its cell.

---- Copper-Ion infiltrates through the virus cells

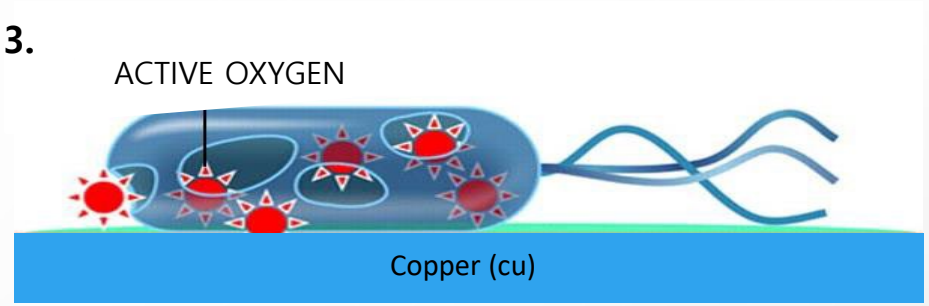
2.



The absorbed copper- ion penetrates the cell membrane, causing the cell to lose its nutrients and water.

---- Destruction of cells

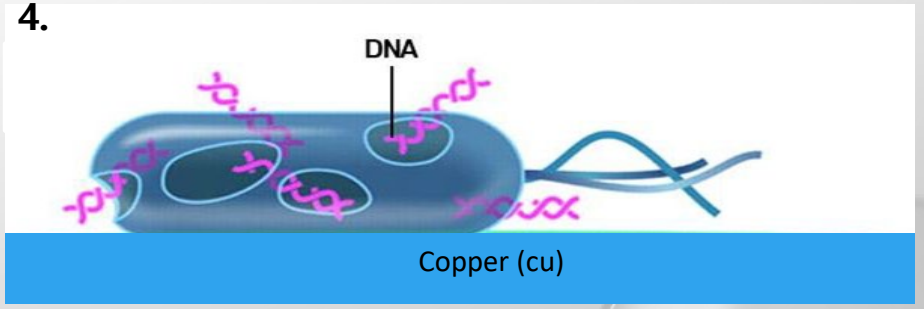
3.



Copper ion pulls the active oxygen through the penetrated hole of the cell membrane

---- Accelerated Destruction of Cells

4.



Bacteria causes a serious prevention of the respiratory and metabolic functions, which causes damage to the DNA that eventually leads to complete extinction.

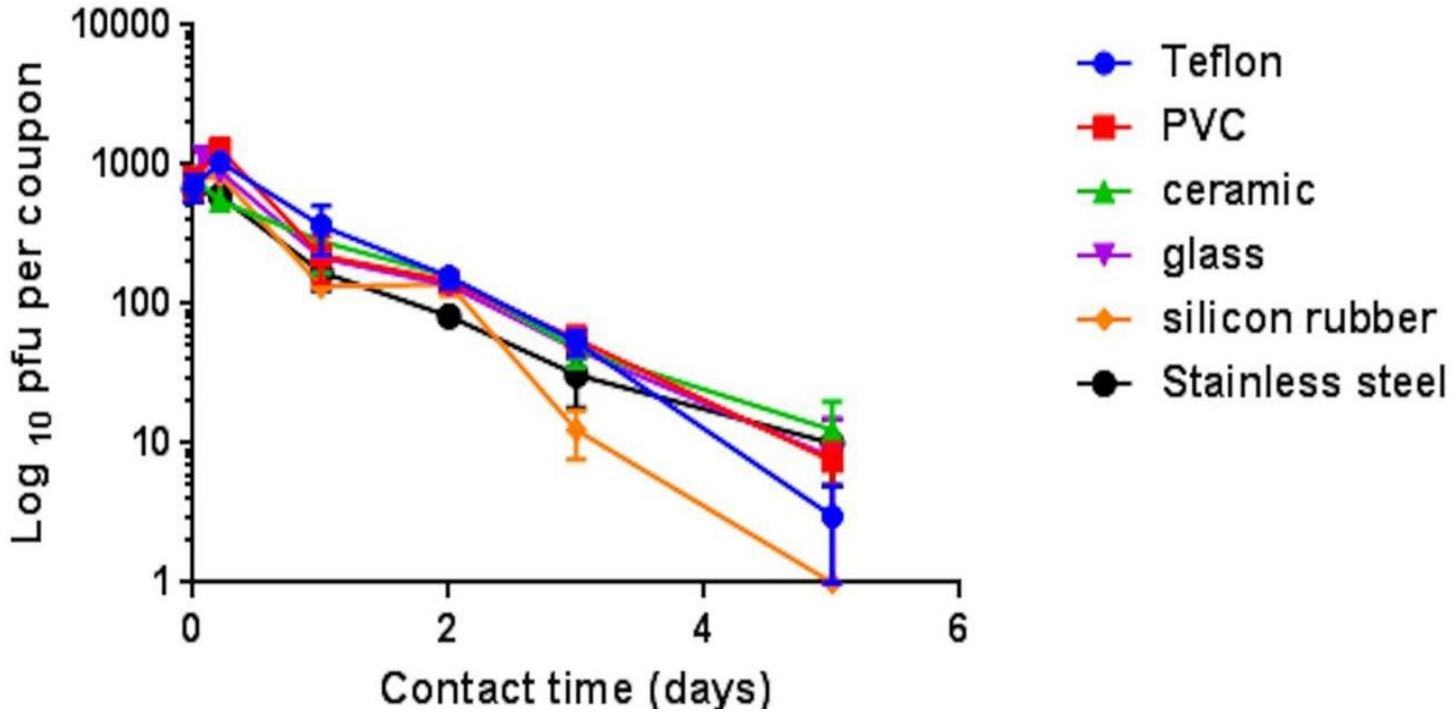
---- Genoce and Plasmid DNA Decomposition

----- Suspension of Cell Replication & Self Replication

Antimicrobial Activity of Copper

Human coronavirus proliferates at least for 5 days on the materials such as plastic, ceramic tile, glass, and stainless steel.

The results indicate survival periods for viruses on surfaces without the antimicrobial copper applications. The virus landing on these surfaces have made contact with bacteria and germs, leading to reproduction, and a development of a stronger and longer surviving virus.



▲ Human Coronavirus 229E Remains Infectious on Common Touch Surface Materials
(Sarah L. Warnes, Zoë R. Little, C. William Keevil)

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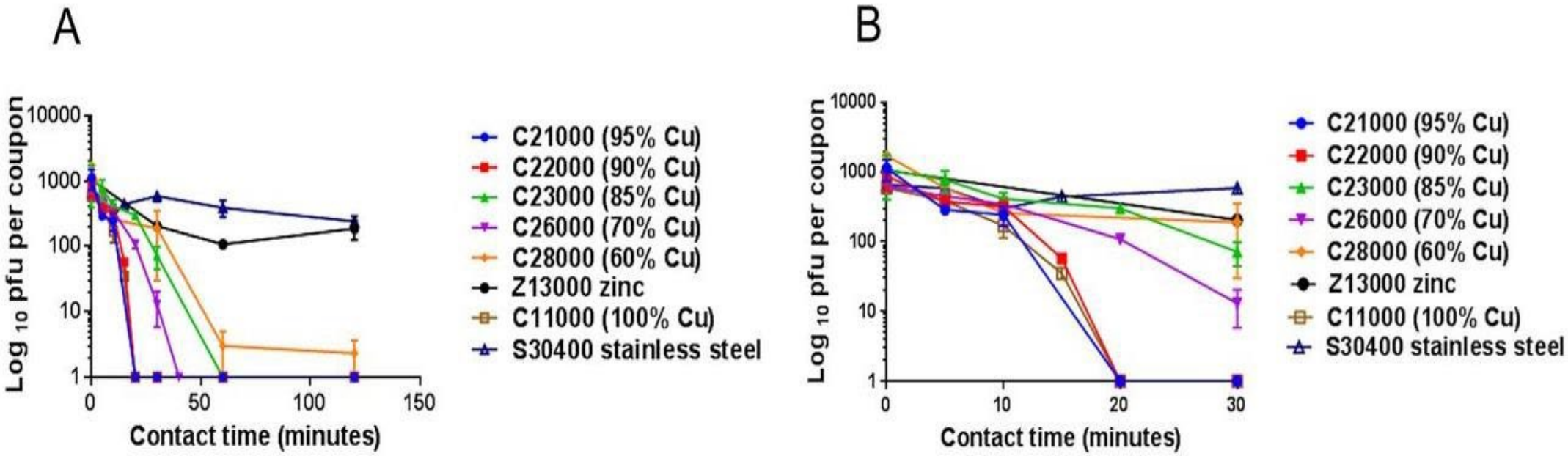
Antimicrobial Activity of Copper

These results indicate survival period for viral cells on different surfaces including copper. Copper, being so effective against bacteria, has either diluted or destructed the bacterial, leading to eventually the destruction of the virus.



▲ Human Coronavirus 229E Remains Infectious on Common Touch Surface Materials
(Sarah L. Warnes, Zoë R. Little, C. William Keevil)

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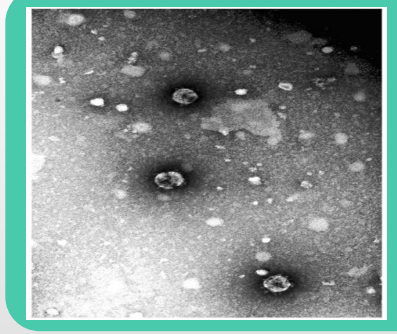
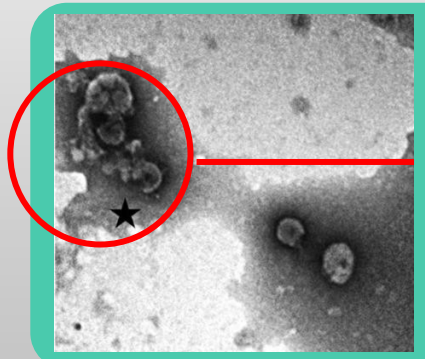
Antimicrobial Activity of Copper

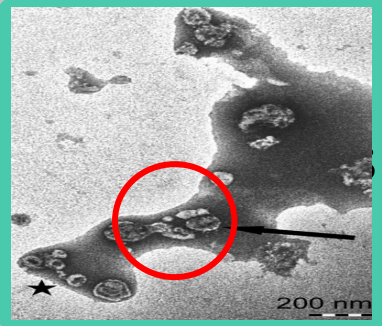
Lab research showed 'anti-microbial copper' deactivated virus cells within minutes of contact with the surface.



After 10 minutes of exposition to Stainless Steel, the virus is still visibly generated.



After 10 minutes of exposition to copper, numerous particles of the virus have rapidly decomposed.



After 30 minutes of exposition to copper, additional damage to the virus leading to damage on the surface of the spike.

Structure of Safety Touch

Providing an optimal antibacterial solution by applying a special process according to the customer's required characteristics.

	Copper film + PE + Adhesive
RF7051CU	**Anti-microbial Copper film** — Provides Optimal Anti-microbial Characteristics **PE film** — Base Material **Adhesive** — Adhesive Coating for Diverse Usage **Softness, Low Transparency** **Adhesion to desired area**

APPLICATIONS

AIRPORTS

KIOSK MACHINES

RESTROOMS

ESCALATOR HANDRAILS

ELEVATOR BUTTONS

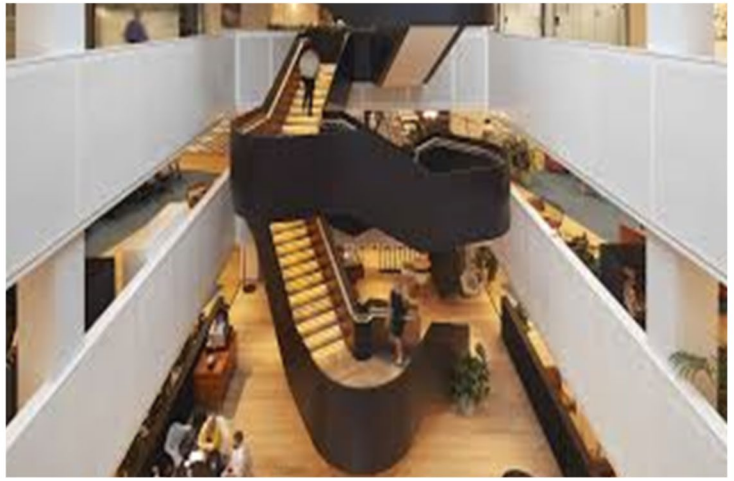
APPLICATIONS

HOTELS

COUNTERS

CARTS

DOORS



HANDRAILS

APPLICATIONS

AUTOMOTIVES

TRAINS/BUSES

TRAILERS

CARS

TRUCKS

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SAFETY TOUCH: ANTIMICROBIAL CERTIFICATION IN KOREA

(28115) 21, Yangcheong-3gil, Ochang-eup, Cheongwon-gu, Chungbuk, Korea
Tel : 043-711-8865 Fax : 043-711-8805

TEST REPORT

APPLICANT : R&F Chemical

REPORT NO. : M287-20-01023
SAMPLE RECEIVED DATE : 2020-03-18
REPORT ISSUED DATE : 2020-03-24
PAGE : 1 OF 4

DESCRIPTION : ONE(1) PIECE OF SUBMITTED SAMPLE SAID TO BE FILM.
ITEM : RNF Anti-microbial Film(Brown)
TEST CONDUCTED : AS REQUESTED BY THE APPLICANT, FOR DETAILS PLEASE SEE ATTACHED PAGES.

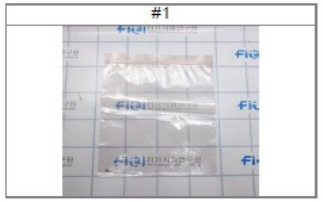
01. ANTIMICROBIAL ACTIVITY AND EFFICACY (JIS Z 2801 : 2010, FILM-CONTACT METHOD)
: CFU/㎠, VALUE OF ANTIMICROBIAL ACTIVITY : log

		BLANK	#1
BACTERIA-1	AT BEGINNING	1.7×10^4	1.7×10^4
	AFTER 24 h	2.6×10^4	< 0.63
	VALUE OF ANTI-MICROBIAL ACTIVITY	-	4.5
BACTERIA-2	AT BEGINNING	1.4×10^4	1.4×10^4
	AFTER 24 h	1.1×10^6	< 0.63
	VALUE OF ANTI-MICROBIAL ACTIVITY	-	6.2

NOTE) STANDARD FILM : STOMACHER® 400 POLY-BAG
TEST CONDITION : THE SOLUTION ARE FIXED AT (35 ± 1) ℃, 90 % R.H. FOR 24 h, AND DETERMINE BACTERIA CELL GROWTH INHIBITION RATE BY POUR AGAR PLATE METHOD.
ANTIMICROBIAL EFFICACY : THE VALUE OF ANTIMICROBIAL ACTIVITY SHALL NOT BE LESS THAN 2.0 log
TEST BACTERIA : BACTERIA-1 - *Staphylococcus aureus* ATCC 6538P
BACTERIA-2 - *Escherichia coli* ATCC 8739
SEE ATTACHED PHOTOS.

** End of The Report **

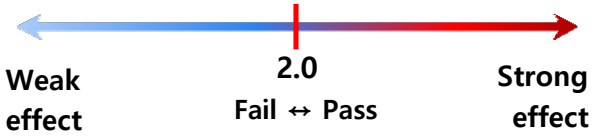
** SAMPLE POTHO **



※ Explanation of Certification

Antimicrobial effect standard value : 2.0

▶ Value 2.0 = 100 times of bacteria are inhibited compared to non-antibacterial treated samples



<TEST Condition>

35℃ / RH 90% / 24hr culture

Strain 1 : Staphylococcus aureus

Strain 2 : Escherichia coli

▼ The medium is clean because the growth of bacteria is suppressed.

Treated culture medium

▼ Proliferation is not inhibited and growth is free.

Non-treated culture medium

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